



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,183	11/07/2001	Daniel L. Gysling	CC-0124	7761

7590

02/05/2003

Terril G Lewis
Howrey Simon Arnold & White LLP
750 Bering Drive
Houston, TX 77057-2198

EXAMINER

KWOK, HELEN C

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/010,183

Applicant(s)
Gysling

Examiner
H. Kwok

Art Unit
2856



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5 6) ☐ Other:

Art Unit: 2856

DETAILED ACTION

Claim Objections

1. Claims 1-13 are objected to because of the following informalities. Appropriate correction is required.

In claim 1, line 8, it appears that the phrase -- within said pipe -- should be inserted after the word "fluid".

In claim 4, line 3, the word -- speed -- should be inserted after the word "sound" to provide consistency.

In claim 6, line 1, the phrase "wherein said" should be changed to -- wherein --.

In claim 10, line 5, the word -- at -- should be inserted after the word "speed".

In claim 11, line 3, the phrase "said two" should be changed to -- said first and second --.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 5 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, line 1, the phrase "the compliance" lacks antecedent basis.

Art Unit: 2856

In claim 5, line 2, the phrase "said first and said second system sound speeds" lacks antecedent basis.

In claim 11, line 2, the phrase "said first and said second effective system sound speeds" lacks antecedent basis.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1, 5, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,835,884 (Brown).

With regards to claims 1 and 5, Brown discloses determining a characteristic of a fluid comprising, as illustrated in Figures 1-6, a first sound speed meter 14 positioned at a first sensing

Art Unit: 2856

region along a pipe 12 to provide a first sound speed signal; a second sound speed meter 16 positioned at a second sensing region along the pipe to provide a second sound speed signal; and a signal processor 20 which is responsive to the first and second sound speed signals provides a density signal indication of the density of the fluid within the pipe. Also, the first and second speed meters determine the first and second sound speed signals from one-dimensional acoustic pressure waves traveling along the pipe. (See, column 1, line 65 to column 2, line 22).

With regards to claims 10 and 12, the claims are directed to a method for measuring the density of a fluid within a pipe and is commensurate in scope with claims 1 and 5 and are rejected for the same reasons as set forth above.

6. Claims 1, 4, 5, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,445,389 (Potzick et al.).

With regards to claims 1, 4 and 5, Potzick et al. discloses an acoustic flowmeter comprising, as illustrated in Figures 1-6, a first sound speed meter 1 positioned at a first sensing region along a pipe 10 to provide a first sound speed signal; a second sound speed meter 2 positioned at a second sensing region along the pipe to provide a second sound speed signal; and a signal processor 100 which is responsive to the first and second sound speed signals provides a density signal indication of the density of the fluid within the pipe. Also, the first and second speed meters determine the first and second sound speed signals from one-dimensional acoustic

Art Unit: 2856

pressure waves traveling along the pipe and the first and second meters are isolated from outside environment by vibration isolating coupling 22. (See, column 4, line 27 to column 5, line 22).

With regards to claims 10 and 12, the claims are directed to a method for measuring the density of a fluid within a pipe and is commensurate in scope with claims 1 and 5 and are rejected for the same reasons as set forth above.

7. Claims 1, 5, 10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,202,494 (Ricbel et al.).

With regards to claims 1 and 5, Ricbel et al. discloses a process and apparatus for measuring density comprising, as illustrated in Figures 1-3, a first sound speed meter positioned at a first sensing region along a pipe to provide a first sound speed signal; a second sound speed meter positioned at a second sensing region along the pipe to provide a second sound speed signal; and a signal processor which is responsive to the first and second sound speed signals provides a density signal indication of the density of the fluid within the pipe. Also, the first and second speed meters determine the first and second sound speed signals from one-dimensional acoustic pressure waves traveling along the pipe. (See, column 4, line 36 to column 5, line 8).

With regards to claims 10 and 12, the claims are directed to a method for measuring the density of a fluid within a pipe and is commensurate in scope with claims 1 and 5 and are rejected for the same reasons as set forth above.

Art Unit: 2856

8. Claims 1-8 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,354,147 (Gysling et al.).

With regards to claims 1-8, Gysling et al. discloses a fluid parameter measurement in pipes using acoustic pressures, comprising, as illustrated in Figures 1-41, a first sound speed meter 14 positioned at a first sensing region having a first compliance along a pipe 12 having a non-circular geometry (i.e. oval) to provide a first sound speed signal; a second sound speed meter 18 positioned at a second sensing region having a second compliance along the pipe to provide a second sound speed signal; and a signal processor 60 which is responsive to the first and second sound speed signals provides a density signal indication of the density of the fluid within the pipe. Also, the first and second sound speed meters is a fiber optic based sound speed meter; the first and second speed meters determine the first and second sound speed signals from one-dimensional acoustic pressure waves traveling along the pipe; and the first and second meters are isolated from outside environment by a concentric shell positioned around the speed meters. (See, column 5, line 50 to column 21, line 18).

With regards to claims 10-13, the claims are directed to a method for measuring the density of a fluid within a pipe and are commensurate in scope with claims 1-8 and are rejected for the same reasons as set forth above. Furthermore, measuring strain of the pipe. (See, column 3, lines 23-31).

Art Unit: 2856

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,354,147 (Gysling et al.) in view of U.S. Patent 6,442,996 (Thurston et al.).

With regards to claim 9, Gysling et al. does not teach an input line positioned between the first and second regions to provide a known quantity of a known substance into the fluid. Thurston et al. discloses an apparatus having an inlet line 6 positioned between sensors 10,12 to supply a known quantity of a known substance into the chamber. (See, column 1, line 6, line 2, line 14). It would have been obvious to a person of ordinary skill in the art at the time of inventing to have readily recognize the advantages and desirability of employing an input line as suggested by Thurston et al. to the device of Gysling et al. since this is well known in the art to provide an input line to supply a known substance into the pipe to change the characteristics and properties of the fluid for calculation and results.

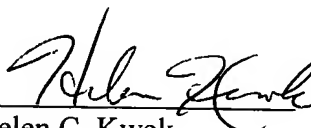
Art Unit: 2856

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references cited are related to apparatus for measuring density using sound of speed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Kwok whose telephone number is (703) 308-8149.


Helen C. Kwok
Art Unit 2856

hck
January 31, 2003